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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/686,545

10/14/2003

James P. Baukus

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11/12/2004

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EXAMINER

THAI, LUAN C

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 11/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/686,545 | Applicant(s) BAUKUS ET AL. | |
| | Examiner Luan Thai | Art Unit 2829 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27, 29-33, 37-42 and 44 is/are rejected.
- 7) ☒ Claim(s) 28, 34-36 and 43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>5/17/04 & 3/15/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse filed 8/23/04 is acknowledged. Since the traverse is found persuasive, the Election/Restriction Requirement is withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 7-11, 13-16, 19-27, 29-33, 37-42 and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Yeh et al. (6,413,847).

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

Regarding claims 1-4, 7-11, 13-16, 19-27, 29-33, 37-42 and 44, Yeh et al. (see specifically figure 3-4, Col. 4-5-6) disclose a method of designing (by a computer, Col. 5, lines 59) and making a multilayered integrated circuit comprising the steps of: forming an upper conductive layer (312) having upper conductive lines (312a) for carrying electrical signals among components of the integrated circuit; forming a lower conductive layer

(304) having lower conductive lines (304a) for carrying electrical signals among components of the integrated circuit; forming an intermediate layer (306) having via holes (308) electrically connecting the upper conductive lines with the lower conductive lines; forming extraneous conductive lines in the upper conductive layer and lower conductive layer (Col. 4, lines 38+), the extraneous conductive lines being made of a material which is the same of the material and the dimensions of the upper and lower conductive lines, the extraneous conductive lines performing functions which are unnecessary to the operation of the integrated circuit and can be floating, or connected to a ground or a power source (Col. 4, lines 49+). Yeh et al. further disclose the integrated circuit being a circuit made of an III-V material (Col. 1, lines 25+). Yeh et al. also disclose (see figure 3G) the larger cells formed from basic fill cells each of which comprises at least one extraneous conductive line or at least one connecting via. Since unnecessary connection between the metal lines (304a) is broken, and the broken metal lines (304a) remain to form a connected metal pattern (e.g., functional conductive lines) and a dummy metal pattern (e.g., extraneous conductive lines), the dummy metal pattern (e.g., extraneous conductive lines) is not overlapping with the connected metal pattern (e.g., functional conductive lines).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-6, 12 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeh et al. (6,413,847).

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

Regarding claims 5-6 and 17-18, Yeh et al. disclose the claimed invention as detailed above except for specifying the integrated circuit being a CMOS (as claimed in claims 5 and 17) or being a bipolar integrated circuit (as claimed in claims 6 and 18).

Applicant's claimed structures in claims 5-6 and 17-18 do not distinguish over the Yeh et al.'s reference and it has been held that a recitation (e.g., a CMOS or a bipolar integrated circuit) with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

Regarding claim 12, Yeh et al. disclose the claimed invention as detailed above except for the structure comprising additional conductive layers and additional intermediate layers. It would have been obvious to one of ordinary skill in the art at the time the invention was made to form additional conductive layers and additional intermediate layers, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

Allowable Subject Matter

6. Claims 28, 34-36 and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

The prior art taken either singly or in combination fails to anticipate or fairly suggest the representation of deleting extraneous connecting vias (or via holes) not located at the first end or the second end of an extraneous conductive line as recited in claims 28, 34-36 and 43, especially when these limitations are considered within the specific combination claimed.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan Thai whose telephone number is 571-272-1935. The examiner can normally be reached on 6:45 AM - 4:15 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Tokar can be reached on 571-272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 2829

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Luan Thai", with a long, sweeping horizontal line extending to the right.

Luan Thai

Primary Examiner

Art Unit 2829

November 4, 2004